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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/839,539	04/23/2001	Michihiro Kaneko	PU01-0171	2127

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EXAMINER

WONG, KIN C

ART UNIT	PAPER NUMBER
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2651

DATE MAILED: 10/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/839,539	Applicant(s) KANEKO ET AL.	
	Examiner K. Wong	Art Unit 2651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11-15 and 17-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-15 and 17-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

This is a response to amendment filed on 6/16/04.

Drawings

The drawings were received on 6/16/04. These drawings are accepted.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims (1-2, 8-9, 14-15 and 21-24) are rejected under 35 U.S.C. 102(b) as being anticipated by Pennock (4885517).

Regarding claim 1: Pennock discloses a disk drive apparatus (in col. 1, lines 12-18 where Pennock describes the disk drive) for controlling, under supply of a power voltage of a level equal to or smaller than a predetermined rating level (in col. 2, lines 22-42 where Pennock describes the monitor the supply voltage to set a voltage for head retraction), a head drive section to position a head in a radial direction of an information recording disk and carry out a write and/or read operation of information while rotatively driving the information recording disk by a rotation drive motor, the disk drive apparatus including:

a forcible restoring section for controlling the head drive section to forcibly bring the head to a retract position when the power voltage goes below a first voltage level smaller than the rating level (in col. 2, lines 22-42 where Pennock describes the

Art Unit: 2651

comparison of the supply voltage to the set voltage with the head retraction when the supply voltage is smaller or below the set voltage); and

a normal restoring section for controlling the head drive section to move the head toward the retract position on the basis of the power voltage when the power voltage goes below a second voltage level smaller than the rating level but greater than the first voltage level (in col. 9, lines 7-16 where Pennock describes two voltage level condition for retraction with one voltage level that higher than other voltage level).

Regarding claim 2: Pennock teaches that wherein the information recording disk comprises a magnetic disk (in col. 1, lines 12-18).

Regarding claim 8: Pennock discloses a disk drive apparatus (see col. 1, lines 12-18 of Pennock) for controlling, under supply of a power voltage, a position of a read/write head in a radial direction of an information recording disk, to bring the head to a periphery of the information recording disk under low power conditions (in col. 2, lines 22-42 where Pennock describes the monitor the supply voltage to set a voltage for head retraction), the disk drive apparatus including:

a rotation drive motor (in col. 4, lines 36-41 of Pennock) for rotating the information recording disk;

a head drive section for driving the head over the information recording disk (in col. 3, lines 30-32);

a voltage value monitor (element 8 in figure 1 of Pennock) for monitoring the value of the power voltage, and

Art Unit: 2651

a controller (in col. 3, lines 30-46 of Pennock), responsive to the monitored value of the power voltage being above a first predetermined level, for providing the power voltage to the rotation drive motor to rotate the information recording disk and to the head drive section to drive the head in a first direction, wherein:

the controller is responsive to the monitored value of the power voltage being equal to or less than the first predetermined level and above a second predetermined level for providing the power voltage to the head drive section to drive the head toward the periphery of the information recording disk (in col. 2, lines 22-42 where Pennock describes the comparison of the supply voltage to the set voltage with the head retraction when the supply voltage is smaller or below the set voltage, and, in col. 9, lines 7-16 where Pennock describes two voltage level condition for retraction with one voltage level that higher than other voltage level).

Regarding claim 9: Pennock teaches that wherein the controller is further responsive to the monitored voltage being equal to or less than the second predetermined level for providing reverse electromotive force from the rotation drive motor to the head drive section to drive the head to the periphery of the information recording disk (in col. 2, lines 22-42 where Pennock describes the comparison of the supply voltage to the set voltage with the head retraction when the supply voltage is smaller or below the set voltage and in col. 4, lines 36-55 where Pennock describes the usage of the back-EMF of the spindle motor supply power for the retraction).

Regarding claim 14: Pennock disclose a disk drive apparatus (see col. 1, lines 12-18 of Pennock), including:

Art Unit: 2651

a rotation drive motor (in col. 4, lines 36-41 of Pennock) for rotating an information recording disk;

a read/write head (in col. 1, lines 15-18) for reading and writing information on the information recording disk;

a head drive motor for driving the head over the information recording disk (in col. 3, lines 30-32);

a voltage input (element 37 in figure 1 and see associated descriptions for details) for providing voltage to the rotation drive motor and to the head drive motor;

a voltage value monitor (element 8 in figure 1 of Pennock) for monitoring the value of the voltage provided by the voltage input (in col. 2, lines 22-42 where Pennock describes the monitor the supply voltage to set a voltage for head retraction); and

a controller (in col. 3, lines 30-46 of Pennock), responsive to the monitored voltage value being above a first predetermined level, for providing voltage from the voltage input to the rotation drive motor to rotate the information recording disk and to the head drive motor to drive the head in a first direction, wherein:

the controller is responsive to the monitored voltage value being equal to or less than the first predetermined level and above a second predetermined level for providing voltage from the voltage input to the head drive motor to drive the head toward the periphery of the information recording disk (in col. 2, lines 22-42 where Pennock describes the comparison of the supply voltage to the set voltage with the head retraction when the supply voltage is smaller or below the set voltage, and, in col. 9,

Art Unit: 2651

lines 7-16 where Pennock describes two voltage level condition for retraction with one voltage level that higher than other voltage level).

Regarding claim 15: Pennock teaches that wherein the controller is further responsive to the monitored voltage value being equal to or less than the second predetermined level for providing reverse electromotive force from said rotation drive motor to the head drive motor to drive the head to the periphery of the information recording disk (in col. 2, lines 22-42 where Pennock describes the comparison of the supply voltage to the set voltage with the head retraction when the supply voltage is smaller or below the set voltage and in col. 4, lines 36-55 where Pennock describes the usage of the back-EMF of the spindle motor supply power for the retraction).

Regarding claim 21: Pennock depicted in figure 1 that wherein the controller includes: a head drive control circuit for controlling the head drive motor to drive the head to a desired position over the information recording disk; and a processor for providing instructions to the head drive control circuit (see associated descriptions for details).

Regarding claim 22: Pennock discloses a disk drive apparatus (see col. 1, lines 12-18 of Pennock) for controlling, under supply of power voltage of a level equal to or smaller than a predetermined rating level (in col. 2, lines 22-42 where Pennock describes the monitor the supply voltage to set a voltage for head retraction), a head drive section to position a head in a radial direction of an information recording disk and carry out a write and/or read operation of information while rotatively driving the information recording disk by a rotation drive motor, the disk drive apparatus including:

Art Unit: 2651

a first means (element 8 in figure 1 and see associated descriptions for details) for controlling the head drive section to forcibly bring the head to a retract position when the power voltage goes below a first voltage levels smaller than said rating level (in col. 2, lines 22-42 where Pennock describes the comparison of the supply voltage to the set voltage with the head retraction when the supply voltage is smaller or below the set voltage) and

a second means (element 9 in figure 1 and see associated descriptions for details) for controlling the head drive section to move the head toward the retract position on the basis of the power voltage when the power voltage goes below a second voltage level smaller than the rating level but greater than the first voltage level (in col. 2, lines 22-42 where Pennock describes the comparison of the supply voltage to the set voltage with the head retraction when the supply voltage is smaller or below the set voltage).

Regarding claim 23: Pennock discloses a disk drive (see col. 1, lines 12-18 of Pennock), including:

a rotation drive motor (in col. 4, lines 36-41 of Pennock) for rotating an information recording disk;

a head (in col. 1, lines 15-18) for reading and/or writing information onto and/or from the information recording disk;

a voltage input (element 37 in figure 1 and see associated descriptions for details) for receiving a predetermined rating level of a power voltage;

Art Unit: 2651

a detector (element 8 in figure 1 of Pennock) for detecting an abrupt decrease in the power voltage;

a forcible restoring section, responsive to detection of an abrupt decrease in the power voltage to level less than a first predetermined level lower than the rating level, for moving the head in a direction toward an outer periphery of the information recording disk under power of reverse electromotive force from the rotation drive motor (in col. 2, lines 22-42 where Pennock describes the comparison of the supply voltage to the set voltage with the head retraction when the supply voltage is smaller or below the set voltage and in col. 4, lines 36-55 where Pennock describes the usage of the back-EMF of the spindle motor supply power for the retraction); and

a normal restoring section, responsive to detection of an abrupt decrease in the power voltage to a second predetermined level, lower than the rating level and equal to or greater than the first predetermined level, for moving said head in a direction toward an outer periphery of the disk under power of voltage from the voltage input (in col. 9, lines 7-16 where Pennock describes two voltage level condition for retraction with one voltage level that higher than other voltage level).

Regarding claim 24: method claim (24) is drawn to the method of using the corresponding apparatus claimed in claim 1. Therefore method claim 24 corresponds to apparatus claim 1 and is rejected for the same reasons of anticipation as used above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2651

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims (3-5, 12-13 and 18-20) are rejected under 35 U.S.C. 103(a) as being unpatentable over Pennock (4885517) in view of Smith et al (6546456).

Regarding claims 3, 4, 12, 13, 18 and 19-20: the reason for Pennock is stated in above rejections. Pennock is silent on the ramp for the retracted head position and the supply power that is from a vehicle (or car). Smith et al is relied on the ramp (element 316 in figure 3 of Smith et al) for the retracted head position (see col. 7, lines 39-50 of Smith et al), and, the power supply from the car power system (as depicted in figure 1 and col. 5, line 9 to col. 6, line 3 of Smith et al).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the power supply system of Pennock to includes with the car power system and ramp for the head as taught by Smith et al. The rationale is as follows: one of ordinary skill in the art would have been motivated to provide an alternative power source for the disk drive and a safety placement of the head.

Regarding claim 5: the combination of Pennock and Smith et al teaches that a microprocessor for operating the forcible restoring section and the normal restoring section with the power voltage (in col. 2, line 66 to col. 3, line 5 of Pennock and element 101 in figure 1 of Smith et al).

Claims (6, 7, 11 and 17) are rejected under 35 U.S.C. 103(a) as being unpatentable over Pennock (4885517) and Smith et al (6546456) as applied to claim 4 above, and further in view of Kao (5374933).

Art Unit: 2651

Regarding claims 6, 11 and 17: the combination of Pennock and Smith et al is silent on the recorded navigation information (or GPS or Global positioning system) on the disk in a drive. Kao is relied on for the teachings GPS that stored in a disk drive (see col. 7, lines 1-22 of Kao).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the disk drive of Pennock and Smith et al with GPS information into the disk drive. The rationale is as follows: one ordinary skill in the art would have been motivated to enable a user (driver) with route guidance on the road as suggested in col. 7, lines 4-8 of Kao.

Moreover, a substitution of one recorded information data (GPS data) for another and without any unexpected result would be a merely substitution of the information data (i.e. video, audio or text data) for the same purpose (recording data on the disk). See in re Ruff, 256 F.2d 590, 118 USPQ 340 (CCPA 1958).

Regarding claim 7: Pennock teaches that wherein only a battery voltage to the disk drive apparatus is monitored to detect variation in the power voltage (in col. 4, lines 26-32 of Pennock).

Response to Arguments

Applicant's arguments filed 6/10/04 have been fully considered but they are not persuasive. The arguments are directed to the newly amended claims.

Conclusion

Art Unit: 2651

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Romano (5384524) and Watanabe et al (6771447) are cited under voltage detection and head retraction.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to K. Wong whose telephone number is (703) 305-7772.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (703) 305-4040. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2651

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

pkw

7 Oct 04


SINH TRAN
PRIMARY EXAMINER